

[0460] It should be noted that dimensions, sizes, and quantities listed herein are exemplary, and the present invention is in no way limited thereto. In an exemplary embodiment of the invention, a patch-sized fluid delivery device may be approximately 6.35 cm (~2.5 in) in length, approximately 3.8 cm (~1.5 in) in width, and approximately 1.9 cm (~0.75 in) in height, although, again, these dimensions are merely exemplary, and dimensions can vary widely for different embodiments.

[0461] While the principles of the invention have been described herein, it is to be understood by those skilled in the art that this description is made only by way of example and not as a limitation as to the scope of the invention. Other embodiments are contemplated within the scope of the present invention in addition to the exemplary embodiments shown and described herein. Modifications and substitutions by one of ordinary skill in the art are considered to be within the scope of the present invention.

What is claimed is:

1. A reservoir comprising:
 - a rigid body having an annular attachment area, a depression formed in the rigid body within an area circumscribed by the annular attachment area, and a tubular port extending from the periphery of the rigid body; and
 - a flexible wall attached to the rigid body at the annular attachment area so as to define with the rigid body a space to hold the liquid, a portion of the flexible wall being movable relative to the rigid body to adjust a volume of the space;
 wherein the tubular port has a port opening in fluid communication with the space via an opening formed in the depression, and the port opening includes a piercable septum, the reservoir arranged to receive liquid into the space through the piercable septum and to provide liquid from the space through the piercable septum, the piercable septum prevents fluid from exiting the space in an unpierced state.
2. The reservoir of claim 1, wherein the reservoir is arranged to provide the liquid in the space from the tubular port based on negative pressure applied to the tubular port.
3. The reservoir of claim 1, wherein the reservoir is arranged to hold liquid in the space under ambient pressure.
4. The reservoir of claim 1, wherein, in a fully filled state, the reservoir is at ambient pressure.
5. The reservoir of claim 1, wherein the flexible wall is arranged as a sheet of flexible material attached to the rigid body.
6. The reservoir of claim 5, wherein the sheet of flexible material has a circular shape.
7. The reservoir of claim 1, wherein at least a portion of the tubular port extends from a side of the rigid body opposite to a side where the flexible wall is attached to the rigid body.
8. The reservoir of claim 1, wherein the flexible wall is arranged such that movement of the portion of the flexible wall toward the tubular port decreases the volume of the space.
9. The reservoir of claim 1, wherein the flexible wall is arranged such that movement of the portion of the flexible wall substantially perpendicular to the tubular port decreases the volume of the space.

10. The reservoir of claim 1, wherein the portion of the flexible wall is movable to contact the rigid body and collapse the space.

11. The reservoir of claim 1, wherein the portion of the flexible wall is movable to contact the rigid body and collapse the reservoir.

12. The reservoir of claim 1, wherein the tubular port defines a receiving chamber to receive an end of a piercing element that pierces the piercable septum to receive the liquid from the space.

13. The reservoir of claim 12, wherein the receiving chamber is positioned between the piercable septum and the space.

14. The reservoir of claim 12, wherein the receiving chamber is adapted to receive the end of the piercing element piercing the piercable septum.

15. The reservoir of claim 12, wherein the receiving chamber is configured such that an end of the piercing element is displaced toward the flexible wall when piercing the piercable member.

16. The reservoir of claim 1, wherein the tubular port includes a neck that extends from the rigid body.

17. The reservoir of claim 1, wherein the depression includes a curved surface positioned opposite the flexible wall, and wherein the opening in the depression is in the curved surface, the tubular port is in fluid communication with the space via the opening in the curved surface.

18. The reservoir of claim 1, wherein the reservoir is keyed to deter incorrect installation or usage.

19. A reservoir for use with an infusion device arranged to provide a liquid to a user, the reservoir comprising:

- a body defining a fluid channel and an attachment area, a depression formed in the body within an area surrounded by the attachment area and a neck element that extends from the body including a portion of the fluid channel therein;

- a movable wall attached to the body at the attachment area so as to define with the body a reservoir space to hold the liquid, a portion of the movable wall being movable relative to the body to adjust a volume of the reservoir space; and

- a piercable member positioned to prevent flow through the fluid channel,

wherein the fluid channel is the only fluid passageway into or out of the reservoir space.

20. The reservoir of claim 19, wherein the reservoir is arranged to provide the liquid in the reservoir space from the fluid channel based on negative pressure applied to the fluid channel provided by the infusion device.

21. The reservoir of claim 19, wherein, in a filled state in which the reservoir space is at a maximum volume, the reservoir is pressurized to ambient pressure.

22. The reservoir of claim 19, wherein the reservoir is arranged to receive liquid into the reservoir space through the piercable member and to provide liquid from the space through the piercable member in a pierced state.

23. The reservoir of claim 19, wherein the piercable member is a piercable septum.

24. The reservoir of claim 19, wherein the movable wall is a piece of flexible material attached to the body.

25. The reservoir of claim 29, wherein the attachment area has an annular shape and the piece of flexible material has a generally circular shape.